



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/581,313	06/12/2000	SHUNJI KAMIJIMA	105955	7075

25944 7590 08/20/2002
OLIFF & BERRIDGE, PLC
P.O. BOX 19928
ALEXANDRIA, VA 22320

EXAMINER

KANG, JULIANA K

ART UNIT PAPER NUMBER

2874

DATE MAILED: 08/20/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/581,313

Applicant(s)

KAMIJIMA ET AL.

Examiner

Juliana K. Kang

Art Unit

2874

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 May 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 14 May 2002 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Applicant's communication filed on May 22, 2002 has been carefully reviewed by the Examiner. The amendments made to claims require new interpretation and new search. Thus, this action is made **final**.

The proposed drawing correction and/or the proposed substitute sheets of drawings, filed on May 14, 2002 have been approved. A proper drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The correction to the drawings will not be held in abeyance.

The Examiner made inadvertent objection to claim 24, thus, claim objection to claim 24 is hereby withdrawn.

Applicant amended the specification. Thus, the objection to the specification is hereby withdrawn.

Claim Objections

Claims 1-27 are objected to because of the following informalities: the newly added limitation "reflected light" in claims 1 and 11 makes the claim vague because one with ordinary skill in the art cannot understand where the reflected light is from with respect to the recited microstructured portions. Appropriate corrections are required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 1, are rejected under 35 U.S.C. 102(a) as being anticipated by Zhou (U.S. Patent 5,953,469).

Regarding claim 1, Zhou discloses the claimed micromachine comprising a first microstructured portion (20), a second microstructured portion (30) of a predetermined shape (30), the second microstructured portion being driven by the first microstructured portion to cause substantially all reflected light to travel in a direction almost perpendicular to an area between the first and second microstructured portions (see Figs. 3 and 6, column 10 lines 26-44). Please note that the recited limitation "formed by mold transfer" is not given patentable weight because the method of forming the device is not germane to the issue of patentability of the device itself.

Regarding claims 2 and 3, Zhou's second microstructured portion is a switch.

Regarding claim 4, Zhou's device is an array of first and second microstructured portions.

Regarding claim 5, Zhou discloses a third microstructure portion of a predetermined shape (40) not driven by the first microstructured portion. Please note that the recited limitation "formed by mold transfer" is not given patentable weight because the method of forming the device is not germane to the issue of patentability of the device itself.

Regarding claim 6, Zhou shows a gap and a step provided between the second and third microstructured portions in Fig. 3.

Regarding claim 7, please note that the recited limitation "formed by photolithography techniques" is not given patentable weight because the method of forming the device is not germane to the issue of patentability of the device itself.

Regarding claim 11, Zhou discloses that the device can be produced by molding processes (see column 19 lines 23-24).

Regarding claims 12 and 13, Zhou's second microstructured portion is a switch.

Regarding claim 14, Zhou uses same mold for making each second microstructured portions (see column 19 lines 23-35).

Regarding claims 17-21, Zhou disclose a micromaching process using photolithography technique including etching methods comprising providing a sacrifice layer (270) and (see column 17 line 27-column 19 line 22).

Regarding claim 24, Zhou discloses a mold. One can reverse Zhou's mold for any use such as a secondary mold. Please note that the claim 24 is a method claim. However, it does not have an active method step. And thus, it does not further limit the claim that it's depended on.

Regarding claim 27, Zhou's method step inherently includes the claimed method of removing the second microstructured portion after being molded.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

Art Unit: 2874

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 8-10 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zhou.

Regarding claims 8-9, as describe above, Zhou teach all the claimed limitation except claimed microstructure portion comprising a resin or photosetting resin. Zhou states that the device may be fabricated by different methods including micromaching, ion exchange or co-extrusion. He further teaches a micromaching process using photolithography technique and a transparent material such as polymer, aerogel, or glass paste (see column 17 lines 27-35). Resin is a polymer material, and using resin as a transparent material in a photolithography technique is well known in the art, thus, it would have been obvious to one with ordinary skill in the art to use a resin or photosetting resin in Zhou's device as an alternative material.

Regarding claim 10, Zhou teaches a metal layer (31).

Regarding claim 22, anisotropic and isotropic etchings are well known in the art as etching methods. Since Zhou teaches an etching method, it would have been obvious to one with ordinary skill in the art to use well-known etching methods such as anisotropic and isotropic etchings.

Claims 25 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zhou as applied to claim 11 above, and further in view of Tamura et al (U.S. Patent 6.017,973).

Regarding claims 25 and 26, as described above, Zhou teaches all the claimed methods except a pressure-reducing step. Tamura et al teach that a method of

producing a molding by placing a mold in a vacuum atmosphere (reduced pressure atmosphere) is well known in order to reduce the bubbles. Thus, it would have been obvious to one with ordinary skill in the art to apply Tamura et al's method step of reducing pressure in Zhou et al's invention to reduce the bubbles in Zhou's resin.

Conclusion

Applicant's arguments with respect to claims 1 and 11 have been considered but are moot in view of the new ground(s) of rejection.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

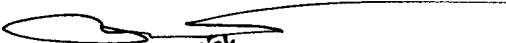
The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Shibata et al (U.S. Patent 5,774,257) teaches a display element for selectively emitting light.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Juliana K. Kang whose telephone number is (703) 305-6259. The examiner can normally be reached on Mondays and Thursday 7:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rod Bovernick can be reached on (703) 308-4819. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7724 for regular communications and (703) 308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-3072.


Juliana Kang
July 29, 2002


Rodney Bovernick
Supervisory Patent Examiner
Technology Center 2800